

DOCKET NO.: IBIS0056-100 (IBIS-0312)
SERIAL NO.: 09/678,434

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FILED:10/03/2000

Amendments to the claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

Claim 1. (currently amended). A self-dispensing system for dispensing a measured quantity or volume of a sample comprising:

one or more disposable storage devices for holding a sample to be dispensed;

a dispensing mechanism connected to each of said one or more storage devices, said dispensing mechanism being in dispensing communication with said storage device for precisely dispensing a measured quantity of said sample from said storage device, wherein said sample passes through a filter; and

a driving mechanism internal to said dispensing mechanism that drives said dispensing mechanism thereby dispensing said sample.

Claim 2. (currently amended). The self-dispensing system of claim 1, wherein said one or more disposable storage devices comprises ~~is a~~ multi-well plate, wherein each of said wells of said multi-well plate has a corresponding dispensing mechanism.

Claim 3. (original). The self-dispensing system of claim 2, wherein said multi-well plate further comprises a standard microtiter plate having a plurality of wells on evenly spaced centers.

Claim 4. (currently amended). The self-dispensing system of ~~claim 2~~ claim 3, wherein said standard microtiter plate further comprises one or more of a 4-well plate, a 24-well plate, a 96-well plate, a 384-well plate, a 1536 well plate, and a 9600-well plate

Claim 5. (currently amended). The self-dispensing system of ~~claim 2~~ claim 4, wherein said standard microtiter plate further comprises one or more of a 96-well plate with wells on about 9mm centers having a capacity of about 30 microliters to about 1500 microliters and a 96-well plate with wells on about 1mm centers having a capacity of about 1 microliters.

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Claim 6. (original). The self-dispensing system of claim 1, wherein said storage device comprises:
a reservoir for holding said sample; and
at least one opening in said reservoir for communicating a sample between said reservoir and said dispensing mechanism.

Claim 7. (original). The self-dispensing system of claim 6, wherein said storage device comprises a collapsible reservoir.

Claim 8. (original). The self-dispensing system of claim 6, wherein said storage device comprises a semi-rigid reservoir having an dispensed volume replacement mechanism for replacing a volume equal to a volume of said measured quantity of said dispensed sample.

Claim 9. (withdrawn). The self-dispensing system of claim 1, wherein said dispensing mechanism is a time and pressure type pump.

Claim 10. (original). The self-dispensing system of claim 1, wherein said dispensing mechanism comprises a positive displacement pump-type dispensing mechanism capable of precisely and reproducibly dispensing a measured quantity of said sample.

Claim 11. (currently amended). The self-dispensing system of claim 1, wherein said dispensing mechanism ~~is reproducibly dispenses a reproducible measured in~~ volume for each of said dispensed measured quantity of said sample to an accuracy of about 5 microliters.

Claim 12. (currently amended). The self-dispensing system of claim 1, wherein said dispensing mechanism ~~is reproducibly dispenses a reproducible measured in~~ volume for each of said dispensed measured quantity of said sample to an accuracy of about 1 microliters.

Claim 13. (currently amended). The self-dispensing system of claim 1, wherein said dispensing mechanism ~~is reproducibly dispenses a reproducible measured in~~ volume for each of said dispensed measured quantity of said sample to an accuracy of about 0.5 microliters.

Claim 14. (currently amended). The self-dispensing system of claim 1, wherein said dispensing mechanism ~~is reproducibly dispenses a reproducible measured in~~ volume for each of said dispensed measured quantity of said sample to an accuracy of about 0.1 microliters.

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Claim 15. (original). The self-dispensing system of claim 10, wherein said positive displacement pump-type dispensing mechanism further comprises:

an inlet valve having an inlet opening for receiving said sample to be dispensed from said storage device;

an actuator fluidly connected to said inlet valve for dispensing said sample; and

an outlet valve fluidly connected to said actuator for receiving and controlling a flow of said dispensed sample from said actuator.

Claim 16. (currently amended). The self-dispensing system of claim 10, wherein said positive-displacement pump-type dispensing mechanism further comprises:

an inlet valve selectively ~~movably~~ moveable between an open position wherein said inlet valve allows a flow of said sample from said storage device to said actuator and a closed position wherein said inlet valve prevents a flow of said sample from said actuator back into said storage device;

an actuator having a suction stroke that draws a sample from said reservoir as said actuator moves in a first direction, and a discharge stroke that pushes said sample out as said actuator move in a second direction; and

an outlet valve which is selectively movable between an open position wherein said outlet valve allows said sample to be dispensed on said discharge stroke and a closed position wherein said outlet valve prevents air from entering said actuator.

Claim 17. (original). The self-dispensing system of claim 10, wherein said dispensing mechanism comprises a cow udder type of dispensing mechanism.

Claim 18. (withdrawn). The self-dispensing system of claim 10, wherein said dispensing mechanism comprises a membrane pump type of dispensing mechanism.

Claim 19. (withdrawn). The self-dispensing system of claim 10, wherein said dispensing mechanism comprises an embedded balls type of dispensing mechanism.

Claim 20. (withdrawn). The self-dispensing system of claim 10, wherein said dispensing mechanism comprises a two-dimensional pump type of dispensing mechanism.

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Claim 21. (withdrawn). The self-dispensing system of claim 10, wherein said dispensing mechanism comprises a rotary valve type of dispensing mechanism.

Claim 22. (withdrawn). The self-dispensing system of claim 10, wherein said dispensing mechanism comprises a steam engine type of dispensing mechanism.

Claim 23. (original). The self-dispensing system of claim 1, further comprising a filter disposed between said storage device and said dispensing mechanism.

Claim 24. (currently amended). The self-dispensing system of claim 1, wherein said self-dispensing storage device, with its sample, are freezable to at least about -20C, and is capable ~~is of~~ being thawed and dispensed.

Claim 25. (original). The self-dispensing system of claim 1, wherein at least said storage device and said dispensing mechanism are disposable after said sample has been completely dispensed.

Claim 26. (canceled).

Claim 27. (original). The self-dispensing system of claim 1, wherein said driving mechanism activates one or more of said dispensing mechanisms corresponding to said one or more storage device at a time.

Claim 28. (original). The self-dispensing system of claim 1, further comprising an automated system having one or more robots for positioning said self-dispensing storage device with respect to a workstation or another storage device and a controller for initiating a dispensing operation of said sample by said self-dispensing storage device.

Claim 29. (canceled).

Claim 30. (canceled).

Claim 31. (currently amended). A self-dispensing system ~~for transferring samples from one self-dispensing storage device to another self-dispensing storage device or a workstation~~ comprising:

a first self-dispensing storage device comprising:

a storage device having one or more reservoirs for holding a sample to be

dispensed;

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one or more corresponding dispensing mechanisms connected to and in dispensing communication with each of said one or more reservoirs of said storage device;

a second self-dispensing storage device comprising:

a storage device having one or more reservoirs for holding a sample to be dispensed;

one or more corresponding dispensing mechanisms connected to and in dispensing communication with each of said one or more reservoirs of said storage device;

a driving mechanism for driving said dispensing mechanism of said first self-dispensing storage device; and

wherein a precise and reproducible measured volume of said sample is dispensed from said one or more reservoirs of said first self-dispensing storage device to said one or more reservoirs of said second self-dispensing storage device.

Claim 32. (original). The self-dispensing system of claim 31, further comprising a robotic system having one or more robots for positioning said first self-dispensing storage device in relation to said second self-dispensing storage device.

Claim 33. (original). The self-dispensing system of claim 32, wherein said first self-dispensing storage device is positioned over said second self-dispensing storage device.

Claim 34. (original). The self-dispensing system of claim 32, wherein said one or more robots have autonomous positioning and transferring features for locating said robots and said onboard self-dispensing storage devices with respect to one another and for dispensing said measured volume of said sample.

Claim 35. (canceled).

Claims 36 - 42. (canceled).